

CLAIM OR CLAIMS

What is claimed is:

1. A method for breeding cows for desired milking characteristics comprising the steps of:
 - a. identifying the allele of the bovine beta2-adrenergic receptor gene in at least one potential parent animals; and
 - b. breeding male and female animals to create a daughter having at least one allele of the beta2-adrenergic receptor gene associated with improved milking characteristics.
2. The method of claim 1 wherein the method for identifying the allele includes isolating DNA from the parent and screening with a method selected from the group consisting of direct sequencing, primer extension, restriction length fragment polymorphism, and allele-specific hybridization.
3. The method of claim 1 whereby the screening method is intended to identify A11C alleles.

4. A method of identifying a bull whose daughter cows will have a faster milking time, the method comprising the steps of
 - a. obtaining a sample of DNA from a bull;
 - b. combining the DNA with a pair of PCR probes comprising SEQ IDs 1 and 2 or SEQ IDS 3 and 4;
 - c. incubating the DNA under conditions permitting the DNA bounded by the PCR probes to produce DNA amplicons;
 - d. isolating the DNA amplicons;
 - e. combining the DNA amplicons with a restriction enzyme specific for CCCGGG for a sufficient time to produce a mixture of DNA fragments from the amplicons comprising CCCGGG;
 - f. applying the DNA fragment mixture to a gel and permitting migration of the mixture components for a time sufficient for them to separate; and
 - g. observing the sizes of DNA on the gel, with the largest fragments being correlated with the A genotype and with better SCS phenotype, and the smaller fragments being associated with the C genotype and less desirable SCS phenotype.
5. A milking attribute PCR-RFLP kit, which comprises:
a pair of primers which flank the 11th nucleotide position of the bovine beta2-adrenoreceptor gene, and a restriction enzyme specific for the CCCGGG site.
6. The kit of claim 5 wherein the restriction enzyme is SmaI.
7. The kit of claim 5 wherein the primer pairs are selected from pair 1 (SEQ ID Nos 1 and 2) or from pair 2 (SEQ ID Nos 3 and 4).